Computer Memory Devices, Inc.
5170 W. Bethany Home Rd.
Glendale, Arizona 85301

COMPUTER DESIGN
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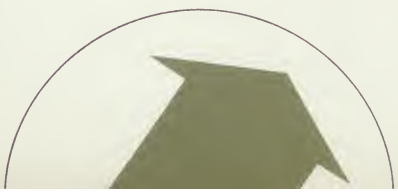

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product specification

MD-2101–2 SINGLE CARTRIDGE DISK DRIVE

The MD-2101–2 A New Low-Cost, Single-Disk Memory Drive

The MD-2101-2 is a new ultra-reliable yet low-cost disk memory drive designed primarily to meet the removable-media storage needs of the mini-, small- and medium-size computer manufacturer. This new drive utilizes the IBM 2315 single disk cartridge, or equivalent, to provide unlimited off-line storage.

The MD-2101-2 contains all device oriented electronics. Formatting and organization logic are minimized. This non-systems oriented approach allows OEM customers greater design flexibility at a corresponding decrease in cost.

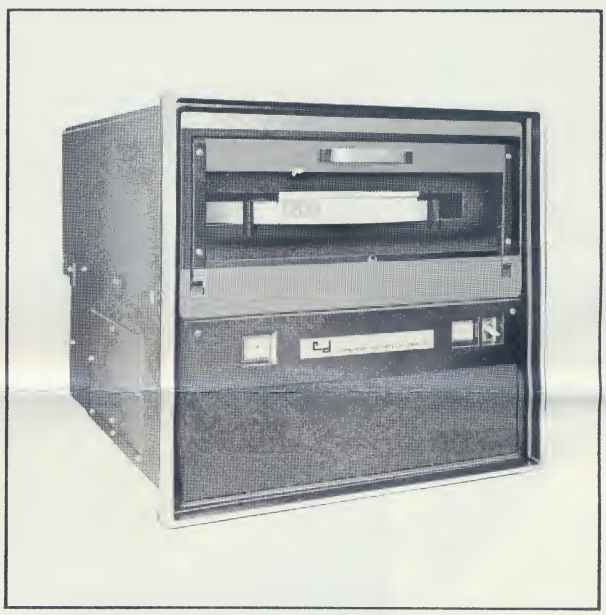
The completely enclosed MD-2101-2, which fits into a standard 19-inch rack mount, contains an internal cooling and air filtering system to enhance its reliability.

The MD-2101-2 is Easily Maintained

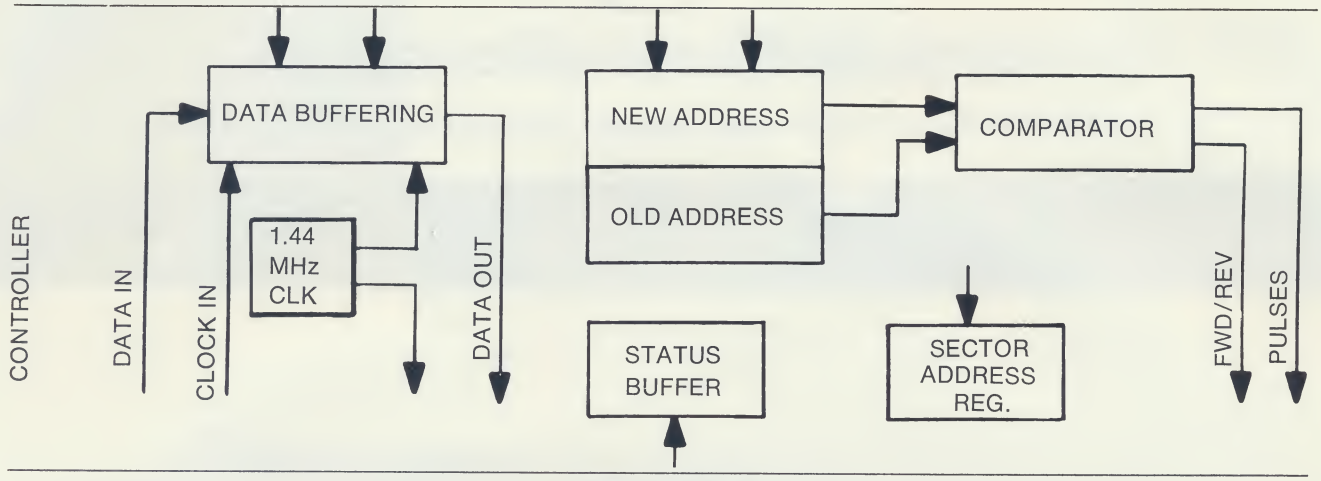
Accessibility and ease of maintenance have been stressed in the design of the MD-2101-2. Circuit modules are located at the front of the unit and swing out for maintenance. Electrical and mechanical adjustments have been minimized. Minor electrical adjustments and single-point lubrication are normally recommended only twice-yearly. Drive-belt tension adjustment is virtually automatic through the use of a spring-loaded mechanism.

Adjustment Free Positioner

The inherent simplicity of the detentless elecro-mechanical positioner used in the MD-2101-2 ensures the utmost in reliability and durability. Careful selection of materials enables self-compensation of temperature effects which might otherwise cause positioning errors. A unique positioner attachment technique results in zero back-lash and virtually no wear. The positioner features dashpot-controlled head loading and a design that facilitates head replacement, should it become necessary.



CENTRAL PROCESSOR



MD-2101-2

INTERFACING

Simplified block diagram for interfacing the MD-2101-2 to a typical mini-computer system.

Interface Signal Definitions:

All interface signals are T²L compatible

1. Input signals
   a. Write select
   b. Write data
   c. Head select
   d. Move forward pulse
   e. Move reverse pulse
   f. Erase control
   g. Initial reset
2. Output signals
   a. Read data
   b. Read clock
   c. Sector pulse
   d. Index pulse
   e. Home position
   f. Position error
   g. Ready
   h. Interlock
   i. Access complete

SPECIFICATIONS

Operating Characteristics

Uses standard IBM 2315 cartridge or CMD approved equivalent. Cartridges are priced separately —

Recording technique	
Double frequency	
Bit density	1100 BPI
Track spacing	.010″
Data Rate	720 KHz
CAPACITY	
Per cartridge	12,000,000 bits*
Track	30,000 bits*
Cylinder	60,000 bits*
Sector	3,750 bits*
Sectors per track	8
Tracks per cylinder	2
Sectors per cartridge	3,200
Tracks per cartridge	406
Cylinders per cartridge	203
ACCESS TIMES	
Rotation	1500 RPM ± 2%
Average latency time	20 m/sec

*capacities are in an unformatted mode

Head positioning	
Track to track	2 m/sec
Average $\left(\text{av} = \frac{\text{max} + \text{min}}{3}\right)$	134 m/sec
200 tracks	400 m/sec
Settle time	20 m/sec

POWER REQUIREMENTS*

+5V(±5%) DC	1. amp.
+12V (±5%) DC	.2 amp.
+24V (±5%) DC	7.5 amp.
−26 (±5%) DC	.2 amp.

*all loads are worse case average

PHYSICAL	
Width	19 inches
Depth	28½ inches
Height	17½ inches
Weight	approximately 95 pounds.

BASIC CONFIGURATION

- Read/write heads
- Read/write circuits
- Head select circuits
- Positioner electronics
- Data/clock separator circuits
- Sector/index mark electronics
- Start sequence control logic
- Stop sequence control logic
- Spindle with motor
- Spindle control circuits
- Error detection logic
- Cartridge receiver
- Air pressurizer
- Air filter
- External DC/AC connector
- I/O cable
- Safety interlocks
- Operator control and indicators.
- Operation/maintenance manual.

OPTIONS:

- Power supply*
  - Under voltage sensing
  - Operator control and indicators.
  - Sequencer.
  - Power loss detection

*the power supply has the capability of driving (2) MD-2101-2's

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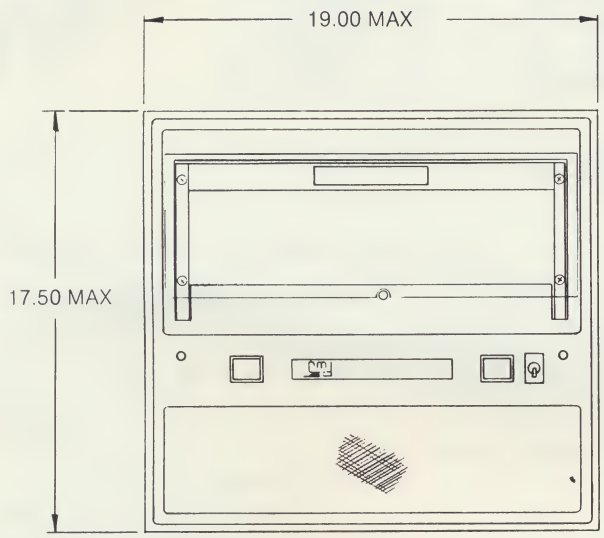

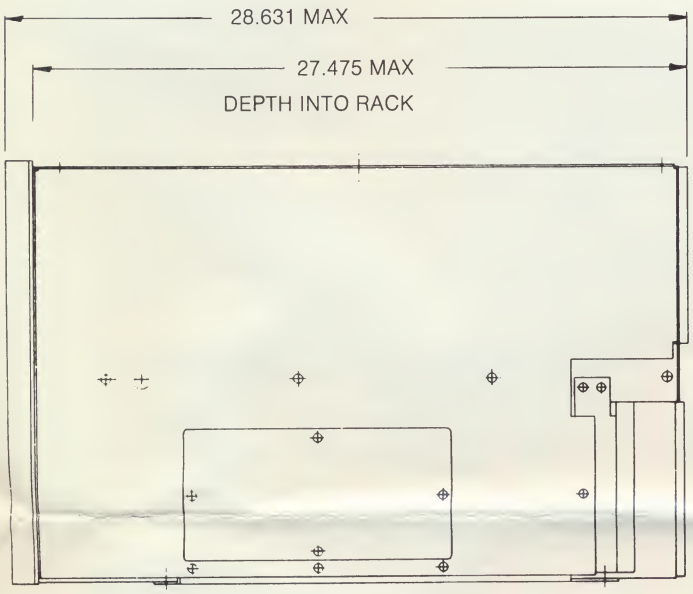

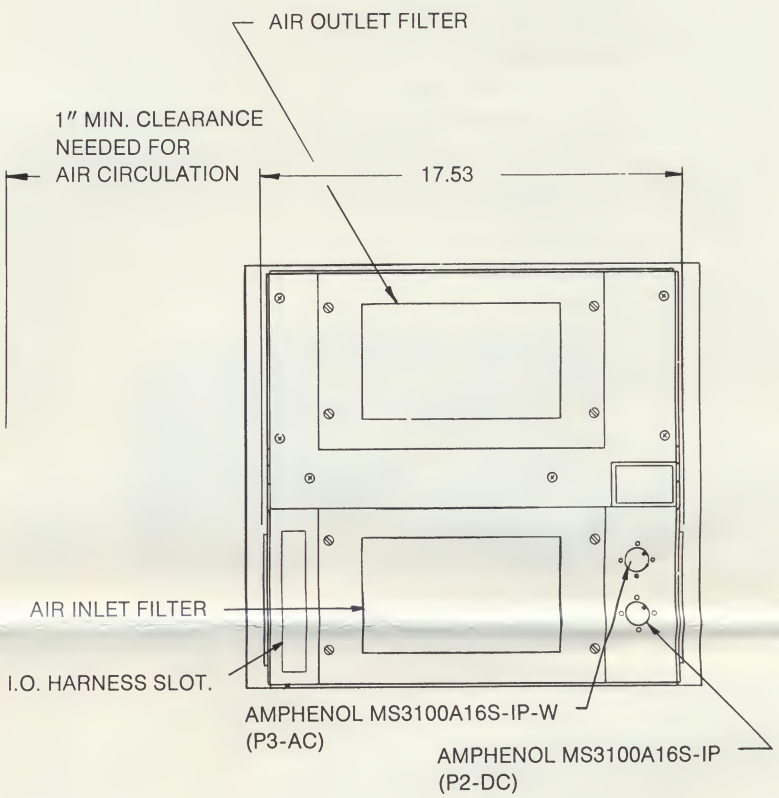

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